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AUTHOR	Leggett, Stanton
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ABSTRACT

This document incorporates the findings of a project initiated to find solutions to the problems of planning, designing, constructing, and utilizing facilities to house career education. The first section in part reproduces scenarios forecasting experts' consensus of views about technological change by the years 1985, 2000, and 2025. Facilities for occupational training cannot exist independently of the educational program; an annotated outline of a career preparation plan illustrates the steps to take and the kinds of actions required to get a program operational in a community. The final section, planning career preparation facilities, considers calculating student time, defining the space necessary, describing the spaces requiring new construction or remodeling of existing spaces, obtaining community support, and the selection and duties of the planning team. (Author/MLF)

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SPACES FOR CAREER PREPARATION

PROCEDURES OF PLANNING

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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MICHIGAN CAREER EDUCATION FACILITIES PROJECT

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Author **STANTON LEGGETT** is President of Stanton Leggett and Associates, educational consultants of Chicago, Illinois. Dr. Leggett is a graduate of Columbia University and has served nationally and internationally as an educational consultant since 1947 on a wide variety of school and college problems.

Additional copies of this publication or others in the series of documents on Spaces for Career Preparation, may be obtained from:

Council of Educational Facility Planners, Int'l.
29 West Woodruff Avenue
Columbus, Ohio 43210

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In January of 1972, The Continuing Education Service, Michigan State University, initiated a research project to become known as the Michigan Career Education Facilities Project. Funding for the Project was made available by the Vocational Education and Career Development Service, Department of Education, State of Michigan.

The relative newness of the Career Education Movement and the recognized need for planning, designing, constructing and utilizing facilities to house Career Education on the part of the educational administrators, facility planners and designers was evident. Traditional solutions, continually increasing costs and the need for greater emphasis on the learning environment prompted the State Educational Agency to give maximum attention to the options for local determination with minimum emphasis on regulating procedures. Hopefully, they will find this series of documents viable tools in their efforts.

The Committee on Architecture for Education, American Institute of Architects, reviewed the Project in its early stage and designated Les Tincknell of Wigen, Tincknell and Associates, Inc., Saginaw, Michigan, as its representative and liaison to the project.

C. Theodore Larson, Professor Emeritus, School of Architecture and Design, University of Michigan, was designated as an architect-educator advisor to the project.

A *first* step resulted in the designation of an Advisory Committee to assist in the development and evaluation of the project. Members included:

William Chase, Program Officer
U.S. Office of Education
National Center for
Educational Technology
Washington, D.C.

Richard Featherstone, Professor
Administration and Higher Education
College of Education
Michigan State University
East Lansing, Michigan

Dwayne Gardner, Executive Director
Council of Educational Facility
Planners, International
Columbus, Ohio

Ben Graves, Project Director
Educational Facilities Laboratories, Inc.
Chicago, Illinois

Milton Miller, Director
Educational Facilities Planning
Grand Rapids Board of Education
Grand Rapids, Michigan

Donald Leu, Dean
School of Education
San Jose State College
San Jose, California

The *second* step involved the appointment of an architectural-planning team whose primary responsibility was to study the recognized needs and propose options for solving local career

facility problems. The team included:

William E. Blurock
William Blurock and Partners
Corona Del Mar, California

C. William Brubaker
Perkins & Will Architects, Inc.
Chicago, Illinois

Stan Leggett
Stanton Leggett and Associates, Inc.
Chicago, Illinois

Linn Smith
Linn Smith, Demiene, Adams, Inc.
Birmingham, Michigan

Peter Tarapata
Tarapata-MacMahon-Paulsen Corporation
Bloomfield Hills, Michigan

The *third* and *final* step in the Project involved the final editing, publication and dissemination of the project findings. This is one of a series of five publications to be released to educators, planners and architects. The series include:

Document 1 Objectives and Options by William E. Blurock
Document 2 The Process of Planning by Stanton Leggett
Document 3 Facility Options by C. William Brubaker
Document 4 Planning for Change by Peter Tarapata
Document 5 Construction Options by Linn Smith

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Project Co-Directors:

Floyd G. Parker, Director
Program and Staff Development
The Continuing Education Service
Michigan State University

Robert Paullin
Occupational Specialist
Division of Vocational Education
Department of Education
State of Michigan

"Career education is the total effort of the community to develop a personally satisfying succession of opportunities for service through work, paid or unpaid, extending throughout life." (1)

SETTING FOR PLANNING

The documents of which this forms a part are focused on how to plan facilities for career education.

It is as though you had asked us, "What do I do to provide good, effective facilities for career education in my community?", and we had answered, "It is a little hard to answer that question simply and directly."

So you said to us, patiently, "All I want to do is to add some shop courses to the high school so that kids coming out of school will be better able to get jobs," or "All we need is a good area vocational center." And we still say things are not that simple, and fuss about, and duck questions, and look not so wise.

Because what we would like to do is not hand you a recipe, but join you in thinking about the problem, so that your ultimate answer will be better and will use all the sophisticated knowledge that is available. Putting together your experience, and what we know, and the resources of a sympathetic and stimulating bureaucracy, we may get a synergistic effect. This is an effete word meaning that the whole is greater than the sum of its parts—which sounds silly, but is true. So use it.

(1) Hoyt, K.B.; Evans, R.N.; Mackin, E.F. and Mangum, G.L., "Career Education—What It Is and How To Do It," Olympus Publishing Company, Salt Lake City, Utah. 1972. p.l.

PLANNING AS A STRATEGY OF THINKING

There are nice, clean, linear ways of thinking about planning facilities for vocational and technical education. These are sometimes called systems thinking, or management by objectives. Usually the kind of sequence of events anticipated is as follows:

Set Objectives
Assess Needs
Develop Alternatives
Test Effectiveness of Alternatives
Institute Program
Evaluate Program
Modify Program
Recycle

Clean, neat, improbable, efficient (if the assumptions are reliable—and regrettably even when the assumptions are unreliable) yet somehow a kind of logical structure that one keeps hoping will work. Remember that Robert McNamara was a great exponent of the systems approach. The Pentagon has had some fascinating overruns, interesting disasters, and Mr. McNamara ended up questioning the assumptions.

There are also fuzzier, non-linear systems, in which the planners—you and your colleagues—use a kind of spiral thinking in which you attempt consciously to broaden the spectrum of choices that you have to deal with, so that if you do take the ordinary route to where you finally decide you want to go, it is because you chose that route, not because you didn't know other routes existed. In such a system you circle around the topic, make tentative forays into the issues, pull back, try another tack, and finally, having satisfied yourselves that you have an adequate base, you are ready to try, tentatively, a more linear attack. The trick lies in avoiding emotional commitment to your own plan, savoring a quality of skepticism, and continually going back to the beginning to check the assumptions.

The strategy proposed here leans to the non-linear, and agrees that all planning is a continuous process.

FOR WHAT WORLD ARE WE TRAINING?

If an average client of one secondary vocational-technical program is 18 years old in 1973, he or she will be 45 years old in the year 2000—actually in the prime of a work career. Will today's skills fit tomorrow's world?

One way to react to the question is to say "No, but we shall retrain people for new jobs." Another approach is to attempt to anticipate some of the changes and to include, consciously, in the training program, some specific education for change and some experience in change. Good planning for vocational education will result in instruction in which those elements of skills that are gauged transferable in time are identified and emphasized, and students are systematically expected to deal with change and with the unknown.

There is a variety of ways of looking into the future. One example, excerpted here, has been developed by the Institute for the Future in California, and has been reproduced in part here merely to indicate the kind of thinking that may be necessary in adapting programs to the future. This material is a series of scenarios forecasting, through the Delphi technique, experts' consensus of views about technological change by the years 1985, 2000, and 2025. Remember that our 18-year-old in 1973 will be 45 in the year 2000, and many will live to see 2025, at the then young age of 70.

EXCERPTS FROM FORECASTS OF SOME TECHNOLOGICAL AND SCIENTIFIC DEVELOPMENTS AND THEIR SOCIETAL CONSEQUENCES*

The Technological World of 1985

Solution of the foreign-body rejection problem will have greatly improved the process of organ transplantation, and to meet the need for natural transplantable organs, "parts" banks will be operating. Competition for organs will have encouraged black markets, although the importance of these markets will have been diminished by legislative regulation of transplantations within the hospital-physician community and by the development of artificial organs, including, for example, implantable artificial hearts with power sources capable of lasting five years. Research will be continuing into the use of tissue-compatible animals to provide yet another source of organs. This activity will have changed the emphasis in medicine from repair to replacement, a development accompanied by the rise of new industries, technologies, and classes of medical personnel.

Several other biological technologies will have significantly affected the world of 1985. Contraceptive drugs will have been developed which will lower fertility rates, being mass-administered as aerosols or as additions to water supplies or staples (as iodine is added to table salt). Societal acceptance of this practice will result from extensive public education about the consequences of overpopulation. But this development will have led to the possibility of a new form of warfare: surreptitious contraception. Research and development projects will have been implemented to create an anticontraceptive pill and detection system. The drug will form only one more addition to the arsenal of biological and chemical weapons.

There will have been an enormous increase in information-handling machines and in the complexities and pervasiveness of their operations. The importance of skilled programmers will have been enhanced. Central data storage facilities with wide public access will have been established and will provide library, medical, and legal data. Privacy will have been challenged by the large data banks, and new mehtods of computer-aided crime will have come on the scene. New computer and automation uses will include automated language translation capable of coping with idiomatic syntactical complexities and sophisticated teaching machines will utilize adaptive programs responding not only to the students' answers but also to certain physiological responses, such as extreme tensions.

*"Forecasts of Some Technological and Scientific Developments and Their Societal Consequences" by Theodor J. Gordon and Robert H. Ament (1969): The Institute for the Future, 2740 Sand Hill Road, Menlo Park, California 94025. pp. 41-47.

Perhaps most startling will be new opportunities and innovations in human reproduction. Non-surgical techniques permitting the choice of the sex of offspring (with 90% certainty) will have been demonstrated, and chromosome typing will be used to discover human abnormalities within weeks of conception. There will be concern about the very detrimental effects of fads for sexes, and regulation of the sex ratio may take the form of legislation or financial incentives to those parents who help to maintain a socially desirable sex equilibrium.

Immunizing agents will have been developed to protect against most bacterial and viral diseases. Inexpensive non-narcotic drugs for producing specific personality changes, such as euphoria, anti-aggression, and increased attention, will be available to the public, and these will have led to improvements in mental therapy, education, and criminal control.

A primitive form of artifical life will have been created and protein usable for food will have been produced, spawning new industries and offering the hopeful prospect of specialized diet additives for protein-deficient populations. Conventional agriculture will be augmented by the advent of large-scale desalination plants which may, through their methods of distribution, be instruments of international power politics.

Various high-speed transportation systems—such as VTOL-STOL, 200 mph trains, ground-effects machines—will be in wide use, but air traffic control problems and transit congestion in major urban city centers will still exist. Automobile engines, fuels, and accessories will have been produced which permit operation of vehicles without harmful exhaust. While these devices will have eased the problems of air pollution, traffic congestion will still be with us.

A manned space station of relatively long duration will be orbiting the earth. It will have brought advances in meteorology, cartography, geology, resources mapping, astronomy, geophysics, and military intelligence. Satellite-derived weather forecasting will allow regular and reliable forecasts fourteen days in advance for areas as small as 100 square miles.

The Technological World of 2000

Between 1985 and 2000, biological research and development will have led to many results, including the development of new methods of behavior control, new reproductive techniques, and advances in medical technology. Apparently the threat of starvation will have lent impetus to the development of several new food-producing techniques. There is some fear that these techniques will offer only a short-term reprieve in the onset of world starvation, that the catastophy (sic) of large-scale starvation will yet occur, since these advances will remove some incentives to the limiting of family size. To minimize this threat, some governments will have enacted legislation designed to limit family size; others may have used or encouraged the use of anti-fertility drugs. World food production will have been expanded through the development of techniques which bring fifty percent more arable acreage under cultivation. Microbial systems converting petroleum to protein will contribute significantly to world food supplies, and ocean fish farming and aquaculture will also be in extensive use. Population pressures will demand all the food the world can produce.

New methods of behavior control which stem from biological research will have included (1) the development and use of LSD-like drugs to heighten perception and learning speed of retardates, (2) knowledge of how to stimulate cognitive growth to a maximum ability in preschool children, (3) brain surgery or psychochemicals for modifying the behavior of criminals, and (4) radio stimulation of the brain of some people in society. These forms of control will have been accompanied by breakthroughs concerning our understanding of human behavior and motivation, including knowledge of the significance of dreams and REM (rapid-eye-movement) sleep in human cognitive development.

New reproductive techniques will also have been developed by 2000. For example, human ova will have been fertilized *in vitro* with subsequent implantation into a surrogate mother. The therapeutic uses of this technique will have allowed some mothers to bear children without their former

fear of undesirable gene combinations resulting. Human beings will have been successfully cloned, and the technique will be used routinely for the breeding of other animals, especially in cattle farming.

The nations of the world will be using the oceans not only as a major source of food, as mentioned earlier, but also as a source of minerals through mining of the ocean floor. This may have led to extension of national sovereignties farther into the oceans and "claim staking" with concomitant political tensions. International treaties, modeled after the 1959 Antarcitica Treaty, will probably have been used to permit more orderly exploitation of the oceans.

An essential feature of man's growing control over his environment will be the relative ease with which he can create ecological judgment as well. This new conscience will lead finally to very strong pressure to control the most threatening of all ecological problems: population expansion in the presence of inadequate food. Legislation, tax incentives, propaganda, and sterilization, as well as abortions in certain cases, will be in intensive use. Many aspects of scientific and technological development will be directed toward coping with problems which stem from the world's increasing population levels. For example, waste disposal will have become even more of a problem by the year 2000, necessitating innovations in the use of self-destroying material. Equally important will be the institution of new types of legislation and incentives which encourage the avoidance of pollution and the creation of a favorable environment.

Several other breakthroughs in physical technologies will have occurred between 1985 and 2000. Complex programmable and self-adaptive robots capable of performing many chores will have found use in the households of advanced countries. With such devices available, discretionary time will also have increased and with it the demand for educational and recreational services. Computers will have been built which comprehend standard IQ tests and score above 150. On-the-spot communication will be increasingly available to the citizens of most advanced countries; individual portable two-way communication devices will be in use, much to the consternation of teenagers required to "call in" on dates and to regulatory authorities required to allocate and control frequencies.

A permanent base will have been established on the moon. Its life support systems will be capable of sustaining ten men indefinitely. This base will provide the earth's most important radio and astronomical observatory. A radio observatory designed primarily to search for extra-terrestrial life will have been constructed. Planetary exploration, primarily unmanned, will be continuing.

The Technological World of 2025

The biological research begun in the last decades of the 20th century will have continued into the 21st, yielding new techniques of control and understanding of human development and behavior. A range of new human reproductive techniques will exist, including extra-uterine development (as a result of the successful simulation of the placenta) and parthenogenesis. Of course, the choice of sex of one's offspring and human cloning, both demonstrated earlier, will have come into wider use. All of these techniques will have raised serious threats to conventional family structuring and many other social institutions which we currently take for granted.

Of particular importance to biomedicine early in the next century will be the capability of modifying genes through molecular engineering to overcome some human hereditary defects. This development will have stemmed from better understanding of the process of differentiation and development and will provide the ability to control certain human phenotypes. Furthermore, skill in genetic engineering and deeper understanding of the genetic processes may have provided the capability to repair the central nervous system through regeneration of individual neurons; perhaps it will have been possible also to stimulate the growth of new organs and limbs in human beings.

This development will probably lead to intense discussion about which diseases should or should not be controlled. The arguments may involve the possibility of producing

specialized classes, such as menials and supermen, and will probably consider the danger that a division between socio-economic classes and, perhaps, between developed and less-developed nations will grow, depending on who has the technological capability and required financing to construct molecular engineering centers. Of course, the application of these techniques to food production will have proven beneficial to the world. The spectacular genetic breakthroughs expected earlier will have been matched by our growning control over the aging process; life expectancy at birth may have been extended chemically by fifty years, with a commensurate increase in vigor. New drugs will also have been used for raising the intelligence of some human beings and for the purposes of producing specific changes in personal characteristics, such as alterations in attitudes and life styles. This new capability of determining the effects of drugs will have resulted from the development of a theoretical pharmacologogical discipline and, thus, the prior analytic prediction of the medical effects of drugs.

The impact of these kinds of changes on social structure will have been immense. Some of the developments might be used to reward special groups, such as high-ranking officials. Scientists might organize to prevent these capabilities from being used adversely. Less-developed nations might demand being made part of the technological present.

In the first part of the 21st Century, research into the means of directly stimulating the cortex may have led to demonstration of a man-machine symbiosis in which certain men (perhaps with implanted electrodes or other, less repugnant devices) extend their intelligence by being connected to a computer. This development might have the effect of multiplying human intelligence manyfold.

Significant amounts of electrical power will have been transmitted by wireless means; superconductors operating in the range of 20-30K, or even room temperature, will have been demonstrated. Use of these new materials and processes will have resulted in the development of new families of vehicles and devices; room-temperature superconductors, for example, could be used to make cars which float over magnetic highways. These techniques will permit cheaper electricity to be produced and, with it, the development of new techniques for refrigeration, communication, and transportation, amounting to a new dimension of control by man over his world. It is possible that research into the composition of matter will lead to ability to produce any element from subatomic particles. If such a capability should be attained, rare earth elements could be produced in whatever quantities needed, and alloys and materials virtually unknown today would come into wide use.

THE THIRD INDUSTRIAL REVOLUTION

Lewis Yoho, Dean of the College of Technology at Indiana State University, pointed out to me that we are now entering a third major industrial or technological revolution. The first industrial revolution harnessed energy to substitute for human energy in the accomplishment of tasks. The second industrial revolution, characterized by Frederick Winslow Taylor's work in "scientific management," essentially harnessed man to machines in order to increase the efficiency of the use of machines. The third industrial or technological revolution will free man finally as work becomes a factor that contributes increasingly to the psychological well-being of its participants.

A study by the Department of Health, Education, and Welfare entitled "Work In America"*, contains the following types of conclusions:

"Because work is central to the lives of so many Americans, either the absence of work or employment in meaningless work is creating an increasingly intolerable situation. The human costs of this state of affairs are manifested in worker alienation, alcoholism, drug addiction and other symptoms of poor mental health . . . A great part of the staggering national bill in the areas of

*Report of Special Task Force to the Secretary of Health, Education and Welfare. Prepared under the auspices of the W. E. Upjohn Institute for Employment Research: MIT Press, Cambridge, Massachusetts 1973.

crime and delinquency, mental and physical health, manpower and welfare are generated in our national policies and attitudes toward work."

The reports points out that many jobs provide the worker with a—

". . . narrow routinized task; where recent high school and college graduates end up in jobs that make little use of their training; where skills rapidly become dated; where a whole range of psychological satisfactions has become at least as important to the worker as monetary rewards."

Perhaps one of the more interesting observations was that the "strongest predictor of longevity was work satisfaction."

Another index of the importance of the worker's response to his job is found in a recent report of a Gallup poll of job satisfaction among young people.

"One-third of all the young people in the 18-29 age-bracket, working in the U.S.A., don't like their jobs.

The authority for that statement is pollster George Gallup, Jr.

At a recent seminar of the American Management Association, Gallup pointed out that fully 70 percent of young workers believe they are not producing in full capacity, that much of their work is not meaningful, that there are increasingly dissatisfied with five-day work weeks, and that they don't cotton to life in urban, industrial areas.

As a result, many of them frankly admit that they loaf on jobs which provide them money but no satisfaction."

—CHICAGO SUN-TIMES
October 22, 1972

The educational program in vocations and technology cannot ignore the messages that are coming out of industry as to the importance of satisfaction on the job. One of the results is conscious "job redesign" in which a worker (or a student) sees the whole picture of the product, performs a variety of tasks, shares in decision-making and in the profits that are derived from extra effort. The educational program, too, can benefit from this kind of approach, as exemplified by the technology simulations developed at Indiana State University, and as described in the Brubaker book in this series (Document 3: "Facility Options").

KNOW YOUR OWN BIASES

No group of people in any walk of life is more strongly programmed than people in education. Teachers and school administrators are brought up in the educational system from earliest grades through graduate school. They go back into the system to work, often with a real commitment to helping their fellow men (and beware the True Believer!). School people's emotional and psychological well-being, as well as economic success, are bound up with success in the educational system. These are no boat rockers. They are us.

When you get ready to plan in career education, some searching of your own soul is in order. The good planner challenges all the assumptions.

Remember that schools, for the most part, train only in academic talents, and leave other talents—like creativity—untouched. And remember that career education can become just as academic—and, indeed, there is great pressure to make it so, under the guise of respectability.

Take a good look at your own biases, and try systematically to find people, ways, or situations to challenge them. After a while you may even enjoy it.

THE OVERALL PLAN FOR CAREER PREPARATION

Facilities for occupational training cannot exist independently of the educational program. The Career Education Plan is the base for facilities planning.

An annotated outline of a Career Preparation plan follows, illustrating the steps to take and the kinds of actions required to get a hardhitting program operational in a community.

Develop An Understanding And Support Of Career Education In The Community

- Use William Blurock's pamphlet in this series of documents "Goals and Options" to get an overview of the program, to stimulate thinking, and to get underway.

  This will lead you to many more materials.

- Organize a group to think about Career Education, make it widely representative and full of action-oriented people—

  Representatives from Parents
  Students
  Students
  Employers
  Unions
  Public Agencies
  Service Clubs
  Schools
  Others

  should make up the study group.

  Make the group large. Set up sub-groups, sub-committees to work in specific areas. Have a good steering committee.

- Develop some agreed-upon objective for Career Education.

  Develop a simple instrument that illustrates the impact of Career Education.

  Test the instrument in the community:

  Use it as a questionnaire:
  Which response best describes your reaction?

  I agree heartily
  I agree reluctantly—
  I disagree—
  I don't think the idea is important—

  Test through interviews:

  Through open ended question—

  Test it through study meetings:

  Have group rewrite the objectives--

  Revise the objectives until you get widespread participation and reasonable support from the community.

Following is one man's objectives. Use it or discard it. It may stimulate you to produce a much better one.

SAMPLE OF QUANTATIVE STATEMENTS OF OVERALL OBJECTIVES FOR A CAREER PREPARATION

OBJECTIVE	LOCAL PLAN			
	STATE GOAL	YEAR 1	YEAR 5	YEAR 10
1. TO PROVIDE AN INTRODUCTION TO WORLD OF WORK THROUGH:				
1A. Career Development Theme in Elementary School.				
(1) Enrollment—Elementary school				
(2) Percent Elementary population enrolled in Career Development program				
(3) Number Elementary school students enrolled in Career Development program				
1B. Career Development Program at Middle School.				
(1) Enrollment—Middle school				
(2) Percent Middle school population enrolled in Career Development theme				
(3) Number Middle school students enrolled in Career Development programs				
1C. Career Development Program at Secondary School				
(1) Enrollment—Secondary school				
(2) Percent Secondary school enrolled in Career Development program				
(3) Number Secondary school students enrolled in Career Development programs				

OBJECTIVE	STATE GOAL	LOCAL PLAN YEAR 1	YEAR 5	YEAR 10
2. TO GUARANTEE THAT NO STUDENT ENTERING HIGH SCHOOL LEAVES WITHOUT OPPORTUNITY OF GAINING AN ENTRY LEVEL SALABLE SKILL REGARDLESS OF HIS CAREER CHOICE				
2A. Percent Secondary school students involved in career preparation				
2B. Number Secondary school students involved in career preparation				
2C. Percent students enrolled completing Secondary program				
2D. Number students enrolled completing Secondary program				
2E. Percent of students available for work, placed in full-time jobs following training				
2F. Number of students available for work, placed in full-time jobs following training				
2G. Percentage of Secondary students leaving High school and available for work, placed in full-time jobs.				
3. TO PROVIDE PROGRAMS OF ADULT CONTINUING EDUCATION TO ALL CITIZENS OF THE COMMUNITY WHO NEED OR DESIRE SERVICE				
3A. (1) Number of people age 18-24 in school district				
(2) Percentage of population age 18-24 enrolled in post-Secondary Career Preparation				
(3) Number of population age 18-24 enrolled in post-Secondary Career Preparation				
3B. (1) Number of adults in district				
(2) Percentage of adults enrolled in Preparatory programs in Career Preparation				
(3) Number of adults enrolled in Preparatory programs in Career Preparation				

OBJECTIVE	STATE GOAL	LOCAL PLAN YEAR 1	YEAR 5	YEAR 10
4. TO PROVIDE OCCUPATIONAL PROGRAM FOR SECONDARY SCHOOL STUDENTS WITH SPECIAL NEEDS				
4A. Number of Disadvantaged by Level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
4B. Percentage of Disadvantaged enrolled in career preparation by level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
4C. Number of Disadvantaged persons for whom appropriate and effective career preparation programs are provided				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5. TO PROVIDE APPROPRIATE VOCATIONAL EDUCATIONAL TRAINING FOR ALL HANDICAPPED PERSONS WHO CAN PROFIT FROM SUCH TRAINING				
5A. Number of handicapped persons in district by level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5B. Percentage of handicapped persons to be enrolled in career preparation programs				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5C. Number of handicapped persons to be enrolled in career preparation programs				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				

DEVELOP AN APPROPRIATE CAREER EDUCATION PROGRAM FOR YOUR COMMUNITY THAT WILL MEET YOUR OBJECTIVES

A good plan—

Restates the objectives in detail and as far as possible quantitatively.

Purposes appropriate programs and services to meet the objectives.

Identifies and secures the resources necessary to meet the objectives—in the community and in the school's staff & facilities

the focus → of this booklet

Installs and operates the programs and services.

Evaluates.

Reshapes the programs and services as a result of experience and evaluation to improve performance in meeting objectives. From time to time, evaluation may result in revision of objectives.

A check list is often useful and an example is included to illustrate what you can do to provide an overall framework for planning. If the general idea of the check list is acceptable, the first task is to revise and make more detailed and specific the tasks to be done.

A CHECKLIST FOR CAREER EDUCATION PLAN INDLUDING SPECIFIC OBJECTIVES FOR CAREER EDUCATION

Checklist #1

A CHECKLIST FOR CAREER EDUCATION PLANS

TASKS	Elementary	Middle School	High School	College	Adult & Continuing Ed.
1. **Set Objectives**					
2. **Develop Programs to Meet Objectives**					
2A Modify Existing Programs					
2B Install New Programs					
3. **Modify or Add to Support Services to Meet Objectives**					
3A Counselling					
3B Occupational Guidance					
3C Placement					
3D Follow-up					
4. **Use Community Resources to Meet Objectives**					
4A Planning					
4B Establishing					
4C Providing Location					
4D Operating					
4E Evaluating					
5. **Retrain Staff to Meet Career Preparation Objectives**					
6. **Resources Necessary to Meet Career Preparation Objectives**					
6A Staff					
6B Materials					
6C Facilities					
6D Funds					
7. **Install and Operate Programs to Meet Objectives**					
8. **Evaluate Programs to Determine Success in Meeting Objectives**					
9. **Develop and Operate Mechanism Necessary to Revise Career Preparation Program to Meet Objectives**					

SPECIFIC OBJECTIVES	Included LOCAL PLAN Yes	No
S1 District Offers Five or More Career Preparation Program Areas (Agr., D.E., Health, H.E., OE and T and I)		
S2 District Offers a Comprehensive Program of at Least 25 Areas of Career Preparation		
or		or
S3 District is Part of a Designed Area Center		
S4 Community College Controls All Local Career Preparation for Adults		
S5 Long Range Career Preparation Planning Takes Place on a Regional Level		
S6 District Uses Performance Citerion as a Basis for Instruction		
S7 Uses General Occupational/ Technical Advisory Board and Occupational Advisory Committee		
S8 Uses Advisory Committee to Evaluate Program		
S9 Utilize Facilities at Least 12 Hours a Day		
S10 Utilize Year Round Operation of Facility		
S11 Demonstrates Instructional Programs for Potential and Actual Dropouts		
S12 Demonstrates Intensive Training Programs for Out-of-School Youth and Adults		
S13 Demonstrates Instructional Programs for Now and Emerging Occupations		
S14 Demonstrates Effective Guidance and Placement Programs for Students		

SPECIFIC OBJECTIVES	Included LOCAL PLAN Yes	No
S15 Provides for Disadvantaged Students		
S16 Provides for Handicapped Students		
S17 Protects Rights of Minorities and Poor for Job Training and Placement as a Priority Target Group		

HOW TO DEVELOP A CAREER PREPARATION FACILITIES PLAN AS A SUBSYSTEM WITHIN A CAREER EDUCATION PLAN

Within career education, there is a major component dealing with helping students to learn skills that are useful in business, industry, service occupations and the whole gamut of employment. These skills, embodied in a comprehensive career preparation plan, include:

Salable skills—welding, typing, assisting a social worker, etc.

Less specific but important skills such as:

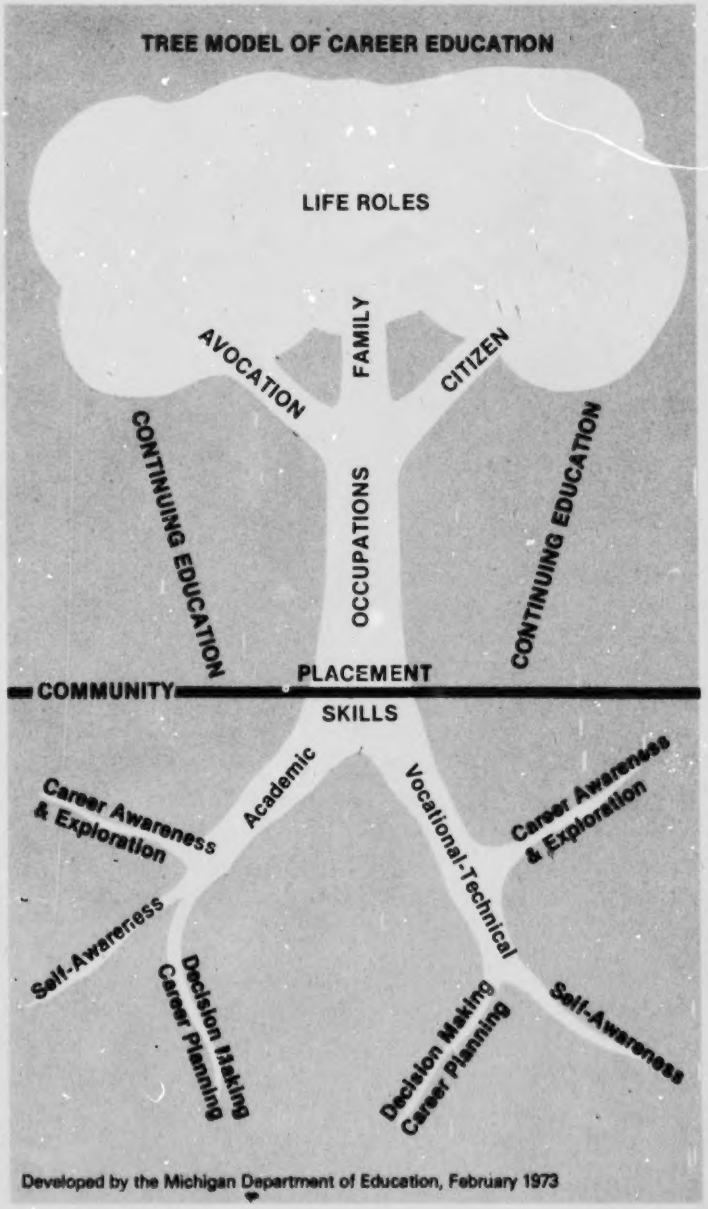
ability to respond to change
ability to get along with others
honest desire to work
interest in contributing to the job
choosing jobs

Skills in communication that are a general responsibility of education but which can be reinforced or, indeed, developed around vocational learning situations:

reading—operating manuals
writing—technical reports
speaking—to communicate
listening—to instructions

When the career preparation is good, it is a base for retraining in other occupational skills as these become needed with changes in jobs and industries. This is the difference between education and training that is so specific as to be of little use when change strikes.

How Do All These Concepts Fit Together?



The major outlines of Career Preparation Facilities Plan are given below.

1. HOW MUCH STUDENT TIME?
   All the students involved and the time they will spend in Career Preparation activities
2. HOW IS STUDENT TIME APPORTIONED to Career Preparation?
3. HOW IS THE SPACE DEFINED that is necessary to absorb the student time apportioned to programs? The characteristics of the space and the capacity to absorb student time are involved.

A CONTROLLING PRINCIPLE—DO IN EDUCATIONAL INSTITUTIONS ONLY WHAT CANNOT EFFECTIVELY BE DONE IN THE COMMUNITY.

4. WHAT CAPACITY DOES SPACE IN THE COMMUNITY HAVE to absorb student time?
5. WHAT UNMET NEEDS EXIST FOR SPACE to absorb student time after appropriate community space has been planned to be utilized?
6. WHERE SHALL EDUCATIONAL INSTITUTIONAL SPACE BE PROVIDED to meet unmet needs for Career Preparation space to assure student time.
7. HOW SHOULD SUCH SPACE BE PROVIDED in educational institutions?

Each of these topics is dealt with in sequence in the following material.

1. HOW MUCH STUDENT TIME?

The equation is the number of students in the career education plan who are targeted as the objectives of the plan for Career Preparation multiplied by the number of hours per weeks involved in the Career Preparation Activities. The product is expressed in weekly student hours.

number of students	x	number of hours of involvement week	=	number of weekly student hours
derived from objectives of career preparation plan		determined by professional staff and verified or revised by evaluation		arrived at by simple multiplication

The number of students is determined by the plan (sample quantitative statement p. 7). If, for example, 100% of the students in secondary school are expected to learn a entry level skill, the number of students that must be dealt with is 100% of the number of students estimated to be enrolled now and estimated to be enrolled in five and 10 years. Since it might be impossible to move to 100% involvement at once, the move from the present enrollment to the goal may be undertaken in a period of time.

Let's work out the mathematics:

DERIVATION OF NUMBER OF HIGH SCHOOL STUDENTS TO RECEIVE ENTRY LEVEL SKILL	PLAN—ANYWHERE U.S.A. HIGH SCHOOL Year 1	Year 5	Year 10
Expected number of students—boys and girls—in upper two years	500	550	600
Goal—percent securing salable skill	14%	50%	100%
Number receiving salable skill	70	225	600

This table could be interpreted to mean that in a high school with 500 students enrolled currently in the upper two years, 14% or 70 now are involved in Career Preparation activities. By Year 5, the number involved will increase to 225 and by Year 10, to 600. The last year all students in the upper two years are getting entry level skills, the high school has increased slightly in size and the objective of 100% getting a entry level skill has been reached, even though 10 years may seem to be a long time.

DERIVATION OF TIME SPENT AT LEARNING ENTRY LEVEL SKILLS

The factor of time is added by the decisions made as to the amount of time required to learn entry level skills at the varying level of skill multiplied by the number of students involved at each level.

For example, at Year 5, there could be a distribution of students like this—still only an example.

Number of Students Gaining a Entry Level Skill
50% of the total in upper two grades, or 225

125 students are enrolled in two year medical technician programs taught three hours a day five days a week.

The number of weekly student hours in a two year medical technician program is 125 students x three hours a day x five days a week = 1875 W.S.H.

50 students are enrolled in welding programs for one year - two hours a day five days a week

½ (50) students x two hours a day x five days a week = 250 W.S.H.

The number of students is divided in half because in the two years under consideration, the students are enrolled in a welding program only one year or ½ the time.

50 students are enrolled in a truck driving program for one hour a day, five days a week for a semester

¼ (50) x one hour a day x five days a week 62.5 W.S.H.

Total = 2187.6 W.S.H.

To the data for Anywhere USA High School for students in the upper two years should be added the following kinds of measures of student time.

DROP-OUTS OR POTENTIAL DROP-OUTS

A special program may be set up for students who are in grades nine and ten who may drop out of school. The number of students can be estimated from past experience. A goal of 100% of such students can be calculated to be reached at once. The program may be, for example, full time or six hours a day five days a week for one month. If there is a peak time for the target students to drop out, this month should set the time—for example at the peak 12 students are potential clients for six hours a day five days a week or 360 W.S.H.

This amount of time should be added into the equation for time, using peak demand in this example, because the plan does not want any vulnerable students like these to leave without help.

COMMUNITY COLLEGE STUDENTS

Treat in a fashion similar to high school students, with obviously different percentages of expected enrollments involved.

ADULTS

Set a percentage of adults 18-24 at one level and a percentage of 24 and older at another level, for example. Base it on present enrollments and look is the State plan or communities with successful programs to set the goals. Readjust goals as experience suggests but keep these out of reach.

SPECIAL TARGET POPULATION

Handicapped and disadvantaged people are special priority targets for career preparation. Estimate the numbers and make sure they are involved in the program at the level planned as soon as possible.

STUDENTS FROM OTHER COMMUNITIES

Sometimes, the number of students to be cared for is increased by students sent to the training system by other communities. These should be allowed for in the student

time equations.

A GROUP OF COMMUNITIES AND AREA FACILITY PLANNING

Add together the student time calculations for each community—separate out the student time demands to be met centrally from those to be met in each participating school.

2. HOW TO DISTRIBUTE STUDENT TIME TO PROGRAMS

Programs are sequences of activities that result when completed in a pre-determined level of occupational skill and understanding.

There can be a short term program in welding teaching a specific welding skill.

There can be a long term program in automotive mechanics that produces, in high school, a competent beginning employee in a garage.

The previous section provided a fix on the number of weekly student hours of time in Career Preparation. The next problem is to distribute that time among appropriate programs.

There are three elements in the equation.

Manpower needs
Student interests
Number of program units

2A. HOW ARE MANPOWER NEEDS DETERMINED?

The information collected in this area is aimed at finding out what Career Preparation is needed in the area; what programs are no longer needed and what modifications of emphasis or number of students may be desirable.

There are three ways to get at this data:

- A comprehensive manpower survey
  - By personal interview
  - By mail questionnaire
  - By telephone survey.
- A specific area manpower survey, the health-related occupation, or a specific skill—welding—for example, using the same techniques.
- Using data for the region developed by associate agencies.

For items 1 and 2 there are substantial sources of examples of procedures and forms to be used. Among them are:

Illinois Occupational Curriculum Project, "Occupational Program Identification", State of Illinois Board of Vocational Education and Rehabilitation, Springfield, Illinois, 1972.

Arnold, Joseph P. et al. "Determining Occupational Emphasis for High School Programs". The Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio 1970.

Michigan State Department of Education, Division of Vocational Education.

A large number of publications on reported state and national manpower requirements exist and recent ones are useful.

An experimental program, OTIS, or Occupational Training Information System, has been developed cooperatively by the Oklahoma State Department of Vocational and Technical Education, the U.S. Department of Labor, and the Research Foundation of Oklahoma State University. This is an attempt to establish compatibility among the major sources and users of manpower data and to develop a versatile system for utilizing existing data to project manpower data. Another approach is being developed in Kansas through Kansas State University. Although the OTIS system is not yet generally available, the advance findings suggest that this will be a reliable tool for planners in this area.

2B. HOW ARE STUDENT AND PARENT INTERESTS DETERMINED?

The interests of students and parents of students in areas of occupational training are of critical concern in developing programs for Career Preparation. These are most frequently obtained by questionnaire and by personal

interview. Parent interviews are useful in determining the ways in which parental choice influences decision-making by students in career choices. These serve also to educate parents particularly as to the great diversity of jobs available.

Increasingly the use of computer-assisted occupational guidance programs, such as CVIS, will provide useful data about student interests in terms of the way students match themselves to needs and requirements of jobs in various industries and businesses.

2C. HOW ARE THE NUMBER OF PROGRAM UNITS DETERMINED?

A program unit is a statistic that attempts to define one teacher's task in a program in terms of the amount of student time for which the teacher is accountable. The program unit is expressed in weekly student hours.

Example:
A program unit, expressed in weekly student hours, is the number of hours per day a teacher works in the program times the number of days in a week, times the expected class size—or, as an example, 6 hours a day x 5 days a week x 24 class size, or 720 W.S.H.

The total number of weekly student hours generated divided by the W.S.H. value of a program will equal the number of program units you will have to play with.

2D. WHAT IS THE BEST METHOD TO DISTRIBUTE STUDENT TIME TO PROGRAMS?

At this time there is no simple or complex formula. Further, there would be some hazard for one State to decide that five auto mechanics would be needed during the next year, and then only to train five individuals. This would mean that the State would decide who among those applying would be auto mechanics, which is not the kind of State we want. We literally must overtrain for jobs to prevent closing out the chances of students to get the job they want or to get a better job than their father has.

Further, ours is a mobile population and an auto mechanic trained in Massachusetts may get a mechanic's job in Arizona.

Finally, our system of forecasting manpower needs is not and cannot be reliable. Too many decisions affecting jobs are political decisions. Too little is known to forecast properly. An example is the forecasts up to 1968 for severe shortages of teachers when, in fact, the oversupply of teachers was just beginning to be felt.

You will have to develop your own way to rationalize the wallcover from data on supply and demand for jobs and student interests to installation of programs.

You will also need to provide in your planning for dropping programs where students or jobs do not materialize. You will substitute new programs and pragmatic policies of doing what works will be the final test. This means you must be able to change programs rapidly.

This does not mean that the search should not continue for a formula to relate manpower needs and student interests to program identification and selection.

One approach is to add manpower needs and interests together somehow to provide an index or ranking of occupational program, and by use of the ranking of program by need, allocate program units by judgment. When this is done, it is possible to weight student interest and manpower needs to gain—pragmatically—a workable scale of need.

A suggested procedure—

1. Identify programs that are appropriate to your area. Assume that there are 100 and you can justify 40 program units.
2. By inquiry, rank the student interest from 100 (greatest interest) to 1 (lowest interest).
3. By inquiry and regional data, rank the manpower needs from 100 (the greatest need or greatest job opportunity) to 1 (the lowest).
4. Weight student interest with respect to manpower needs. Francis G. Connell in a study of occupational training in Westchester Co., N.Y., suggested this procedure and used twice the weighting for student interest as compared to manpower needs. If you don't weight these you give each the same importance.

5. Apply the weighting to the raw rank and add together the rank to provide a combined rank of need or importance. For example, if health occupations were ranked fourth in manpower needs at 97, and 21st in interest at 80, and you used a factor of 1.5 in weighting interest, the combined score would be 97 + 1.5 (80), or 97 + 120, or 217, which would rank high in priority, the highest possible ranking being 300. Food service occupations, on the other hand, might be third in manpower needs at 98, but the student interest was 10th from the bottom. This indicates the kids know the jobs are dead end, poor working conditions, and, for most part, low-paying. Apply 1.5 to 10 for 15, add this to the manpower index of 98, and get a combined score of 113. This is not a high priority program.
6. Use judgment in distributing the number of program units to the weighted rank order of need. Obviously, more than one program unit can be allocated to a program. Business education is a general cluster of programs that will command high manpower needs and fairly high student interest. In an established program where students have freely enrolled, the present number of weekly student hours generated can be multiplied by factors related to changes in the total number of students to be served and divided by a program unit to determine how many program units to be devoted to that area.

2E. TABLUATING STUDENT TIME DISTRIBUTED BY PROGRAMS

The following sample table may be of some use in summarizing your experience in allocating student time to programs.

The tabulation can be filled in and tested. An exercise should be gone through to link a cluster program that cannot be offered to other programs to provide the needed service.

Weekly student hours are used again to encompass the wide variety of time allocations that are probably going to be characteristic of the school of the future. Modules or building blocks of courses can best be accommodated in a time matrix, too. There probably will be much less of a two year course and much more of a composite of learning modules or bits put together to form an individualized learning prescription for a specific individual.

Sample Table
Summarizing Distribution
of Student Time to Programs

Program (1)	Rank Order In Student Interest (2)	Weighted Rank Order In Student Interest Col. 2 x weight (3)	Rank Order In Manpower Needs (4)	Composite Rank Order Col. 3 x Col. 4 (5)	Number Program Units Allocated (6)	Number of W.S.H. Col. 6 x W.S.H. program unit (7)
					TOTAL*	(1)

*This number should add up close to the total number of weekly student hours available for distribution.

3. HOW TO DECIDE THE LOCATIONS OF VOCATIONAL PROGRAMS?

The vocational programs will be located in a variety of places. The total amount of student time in them has been forecast and the programs to be offered have been determined.

Now space must be designated, captured, formed or constructed to absorb the required amount of student time. The space must have characteristics that will satisfy the physical needs of the programs planned. The equation is:

The total of amount of student time to be provided for = the capacity of the following spaces to absorb that time.

1. Existing high school spaces specifically designed for Career Preparation activities.	1. The area vocational center provides certain career preparation activities efficiently and economically.
2. Existing high school space freed by the emphasis in student time allocation on Career Preparation activities.	2. When you divert a good deal of student time into occupational education, you take it away from college preparatory education. Perhaps the shift of function will free space in the high schools that can be converted to career preparation. The big areas of employment for the future are in services, not in manufacturing, and this makes a difference in space.
3. Community college space available for high school use.	3. Sometimes community college/high school joint planning will result in a shared laboratory when neither one could justify having a laboratory separately. Some high school students should take some of their work in the community college. The walls between the two agencies are disappearing.
4. Community space available for work experience programs of all types.	4. Work experience in the community can absorb a significant amount of student time and should be built into the formula.
5. Community space available for conversion to Career Preparation activities.	5. Community space is described and ways to use it are developed in "Facilities Options" by C.W. Brubaker, one of the reports in this series.
6. Needed new construction to house Career Preparation activities.	6. New construction is what you do when you have exhausted all the other possibilities.

4. TRANSLATING STUDENT TIME INTO SPACE

Capacity is the ability of a space to absorb weekly student hours of student time. Expected number of students at a time x hours of use = capacity of space expressed in W.S.H.

Capacity is an art form best represented by a schedule, which, in turn, is a plan to use time—either of students or teachers.

The expected number of students in a space is a policy. Some programs have moved to clusters of faculty and students in open space, usually expressed multiples of classes. Others have developed individual student learning paths through common tools.

The number of hours of use is also a policy. Most programs in area vocational centers run two sessions a day for high school students and one in the evening for adults during the normal school year. Other programs will operate continuously 24 hours a day year round. Still others fall in-between somewhere.

When planning facilities, the capacity should be established for a shift. If the day shift is the heavy load, the same capacity will house the evening shift. The pattern of use of the facility will determine the number of shifts, and hence the capacity.

The essential calculation is divide the number of weekly student hours generated by a program or cluster of programs by the capacity of a space or cluster of space to absorb weekly student hours in that program.

Doing this by steps is as follows:

1. Take the weekly student hours generated for a program and expressed in the Summary Table of Student Time Distributed by Programs.
2. Divide that figure by the capacity of the space.

For example:

Dental assistants may have an allocation of 720 W.S.H. A dental assistant's laboratory may accommodate three sections of day students, 20 students at a time, for three hours each session, five days a week—so that the space could absorb 3 x 20 x 3 x 5, or 900 W.S.H. One laboratory would do. If the school operated only two sessions a day, the capacity would be 2 x 20 x 3 x 5, or 600 W.S.H. One laboratory would not absorb the time. You will have the following alternatives:

1. Restrict enrollment
2. Move to three sessions a day
3. Increase class size
4. Utilize work experience to provide for the excess enrollment
5. Think of something else to do to survive

Another example is Typing I as a course in business education.

Assume 300 students are allocated to business education typing 1 hour a day, 5 days a week.

300 x 1 x 5 = 1500 W.S.H.

If a usual 35 student typing classroom, well planned, used 5 out of 6 periods a day, 5 days a week, the room would absorb 875 W.S.H.

You now need two regular typing rooms to accommodate the W.S.H. generated. On the other hand, you may install an individualized learning system with multi-channel dictating equipment and decide that this can be done with large group instruction. Allowing for variations in size of groups, 300 students in a 6 period day could be expressed as 50 students a period, corrected to 60 students x 6 periods a day x 5 days a week is 1800 weekly student hours.

Once you have decided on number and kind of teaching stations and capacity of the teaching station in terms of W.S.H., which can be translated readily into number of students at one time, the problem becomes one of the space necessary to house the students.

5. DESCRIBING THE SPACE

The spaces requiring new construction or remodeling of existing space to provide learning space for outside of the real world having been established, these spaces must be described to help an architect understand what is needed to house the program.

This description can be developed in words, in diagrams and in quantitative terms. The architect should know what the process is that will be carried on in the laboratory. Casettes, film strip, trips to parallel programs and words will help him get a feeling of the task.

You will need to describe the space in diagrams of relationship, state the capacity, and list the various areas in square feet. Details about finishes, utilities, special conditions and location are required. A general idea of equipment is most helpful.

6. THE PLANNING TEAM

The development of a plan for Career Preparation facilities, or something else for that matter, has a series of expected outcomes. These may be classified as:

1. A plan for the facility
   - 1A. An operational plan
   - 1B. Contract documents for construction or modification of space
2. Support for the plan, which causes the plan to be put into effect
3. Training of those who must make the operational plan or the physical facility work. Curiously, there is no better time to reeducate a faculty than during a building or remodeling project. Perhaps it is because, by moving to consideration of a facility, no one is threatened by the suggestion that what has been done in the past is not necessarily perfect.

If you play your cards right, you get all three results for the price of one—a classical example of synergism.

The careful developer of a planning team has all the outcomes in mind. Support for the plan is one of the most significant factors that enters into the selection of the planning team. Without support, the work of the team will be ineffectual and may actually set back outcome 3, reeducating staff.

The power base in dealing with support is divided between the voters of a community who must support the project and the State from whence flows much of the cash. The local governing body of the educational agency has many legal obligations. It may or may not represent community thinking, and this is not necessarily a good sign of whether or not the community will support the plan. Of course, one of the real tests of a good administrator is whether or not he can read "the community" accurately. There is really no "community"—there are many. The final action of a school district in voting is a resultant of a large series of independent decisions. To tap into community power, one reads the community as it really is, and assures that those whose communication systems within the community are effective are included in membership in the planning team.

Dealing with the State is not as capable of local influence. The State becomes a bureau of the State Education Department, and this finally becomes people. The quality of the people who will work with you from the State is an unknown but, in view of the great and growing concern about career education, probably pretty high. There are two basic choices in dealing with State agencies, and obviously the agencies influence this too. One is to prepare a plan and submit it to the agency for review at such intervals as may be required. The other is to include representatives of the agency in your planning team, as a partner in planning. Under the first approach, your plan is reviewed according to the agency's criterion. Under the second approach, through joint effort leading to greater understanding, the criterion are modified or refined in the light of real local needs.

Support represents a criterion for arrangement of the planning team. Information, and its corollary learning, also represents an important element. People who contribute information to the planning process put themselves in a

good position to learn. The welter of decisions that must be made on the basis of information, eventually produces a setting in which, in a good planning team, thinking takes place. This is an admittedly dangerous outcome, but it adds excitement to the planning process and may, if it is not killed somewhere along the line, contribute to a significant plan.

Information-learning contributors to the planning process include:

Teachers and educational staff members, including non-public schools participating

Representatives of management and labor in business and industry

Students and parents

Representatives of the State agency

Others—university faculty members, community college staff, writers of books and articles, speakers at meetings, people met on the street, etc.

For the first objective, the development of an operational plan and the development of a facilities plan, you will lean more heavily in some aspects of the planning upon professionally trained people on the staff or those hired as temporary members of the staff. Development of technical documents related to learning by objectives, or working drawings and specifications for construction of a facility, require professional competence which can respond to general community needs, but which has within the task professional standards and demands that must be met.

Thus, the team includes elements of support, of information and learning, and professional skills. The one factor that is not accounted for is judgment. So a measure of the team is the quality of the people involved. There are a variety of functions in the planning process that, excluding professional skills in carrying out tasks, are critical and should be looked for in assembling people.

Someone leads . . .

Keeps things in perspective, allows wide-ranging discussion yet gets things done, is organized, has a keenly developed sense of time, knows when important questions are under consideration and when unimportant issues are cluttering up the place, often respected, sense of humor useful, charismatic.

There are people who think . . .

Real wisdom is a rare commodity. These are the people who keep turning ideas over, who examine alternatives, who are not always for the new yet not enraptured by the past. When one of these members of the planning group feels comfortable with a decision, you probably have made a good decision.

There are workers who do things . . .

Every group has those who are willing to do things—collect data, study information, interview people, and so on.

There are members who represent . . .

A planning team has its roots in the various segments of a community so that the ideas and interests of a group in the community can find their way easily into the deliberations of the planning team. Manufacturers, students, union members, teachers, businessmen, parents, foremen, non-public school parents, school board members, mechanics, community college staff members and newspaper reporters are samples of community members representing interested parties.

In a good team, the same people perform many functions. A reliable thinker may be a reliable worker who represents a point of view and exercises leadership.

There is no one good planning team organization. Each community will find its own way toward an effective organization. Generally these functions are served:

1. A governing body with legal authority to make decisions, responsible ultimately to the voters and to the requirements of Federal and State laws.
2. A decision-making group for the project. In some cases this is the governing body. In other cases the governing body may delegate some of its authority and much of the problem to an *ad hoc* planning or steering committee.

3. Committees of the steering committee, reporting on specific matters, increasing the opportunity to involve people from within the community and within the school system.
4. The administrative staff of the school system, providing services and professional skills for the decision-making group and including, on a temporary basis as members of the administrative staff, persons skilled in architecture, building, education, or such other areas as may be thought necessary.

Thus, there is a governing body. It will either act as the steering committee, will insert itself into the steering committee by asking others to be members, or will ask a group to serve as an *ad hoc* steering committee. Assuming that the last choice has been made, the composition of the steering committee is of paramount importance and the size becomes a problem. Generally, a steering committee could fall between nine members and fifteen members. It can be expanded to a larger committee on occasion by including members of its subcommittees. Alternatively, a large committee can be asked to serve—100 members plus or minus—and be organized into the steering committee and subcommittees.

Subcommittees are set up as study committees on specific tasks to be undertaken as a part of the plan. A subcommittee might be developed for each of the major topics—such as, how many students?, what programs?, where offered?, impact of year-round program?, etc.

For example, a subcommittee attempting to deal with the question of what instructional programs should be offered could include, in addition to their support function, the following kind of people in information/learning roles:

a) Someone from the State agency engaged in development of a manpower information system model
b) Local personnel officers
c) Guidance people from the schools
d) Union representatives, particularly if there are apprenticeship and union membership problems
e) Students and parents
f) Representative of the local branch of the State Employment Service
g) Teachers

The flow of ideas into the committee from all sources should be encouraged. The process of learning on the job should be applied to as large a number of staff members as can conveniently be worked into the structure without overloading the planning staff with school people.

The above notes have dealt with the deliberative side of the planning. The professional side, in curricular matters and in factors related to building or remodelling, have their own dynamics. The school system should have developed, or will develop if it is a new organization, a way to secure maximum effective participation of faculty and staff members in planning. The introduction of specialists, on temporary hire, from outside the system has complications that should be considered.

6A. SELECTING THE TEMPORARY MEMBERS OF THE PLANNING TEAM

Architect
Usually an architect will be required to assist the district in preparing plans and specifications for new construction or remodelling of existing space.

The American Institute of Architects at 1735 New York Avenue N.W., Washington, D.C. 20006, will happily provide suggestions on how best to select and employ an architect.

Construction Manager
See Linn Smith's booklet on "Construction Options" for a discussion of the role and performance of a construction manager.

Educational Consultants
These are temporary employees of the school system who bring with them a considerable experience which may be lacking in the school system and an ability to broaden the spectrum of choices that the school system selects from. Educational Consultants are not designed to make your decisions for you. They can help you.

7. PUTTING IT ALL TOGETHER

The planning team and the planning process has brought you down the path of educational planning preparatory and basic to facilities planning.

Three booklets in this series take you the rest of the way:

C.W. Brubaker "Facilities Options"
Stretch your mind with this exposition of the wide variety of ways people are dealing with vocational facilities.

Peter Tarapata "Planning For Change"
A stimulating discussion of keeping options open in building for change and development of a procedure for facilities management.

Linn Smith "Construction Options"
A penetrating look at a wide variety of new ways to get better buildings

and don't forget frequently to return to:

William Bluroch "Goals and Options"
. . . or what it is all about.